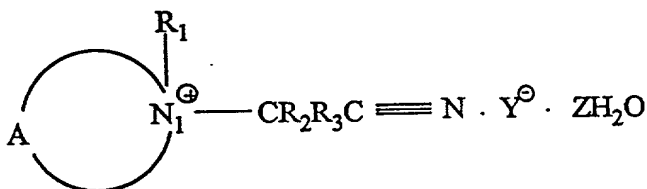


It is Claimed:

1. A substantially solid composition, the composition having therein a compound with the structure of Formula I

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FORMULA I

wherein A is a saturated ring formed by a plurality of atoms in addition to the  $\text{N}_1$  atom, the saturated ring atoms including at least one carbon atom and at least one of O, S, and N atoms, the substituent  $\text{R}_1$  bound to the  $\text{N}_1$  atom of the Formula I structure including either

10 (a) a  $\text{C}_{1-24}$  alkyl or alkoxyated alkyl where the alkoxy is  $\text{C}_{2-4}$ , (b) a  $\text{C}_{4-24}$  cycloalkyl, (c) a  $\text{C}_{7-24}$  alkaryl, (d) a repeating or nonrepeating alkoxy or alkoxyated alcohol, where the alkoxy unit is  $\text{C}_{2-4}$ , or (e)  $-\text{CR}_2\text{R}_3\text{C} \equiv \text{N}$  where  $\text{R}_2$

15 and  $\text{R}_3$  are each H, a  $\text{C}_{1-24}$  alkyl, cycloalkyl, or alkaryl, or a repeating or nonrepeating alkoxy or alkoxyated alcohol where the alkoxy unit is  $\text{C}_{2-4}$ , the  $\text{R}_2$  and  $\text{R}_3$  substituents being each H, a  $\text{C}_{1-24}$  alkyl, cycloalkyl, or alkaryl, or a repeating or nonrepeating alkoxy or alkoxyated alcohol where the alkoxy unit is  $\text{C}_{2-4}$ , Z is

20 a value in the range of 0 to 10, and wherein Y is monovalent or multivalent and is sulfate, bisulfate, tosylate, or mixtures of sulfate and bisulfate as counterion.

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2. The Formula I compound as in claim 1 wherein A is a saturated ring formed by four carbon atoms and one oxygen atom in addition to the N<sub>1</sub> atom.

3. The Formula I compound as in claim 1 wherein A is a saturated ring formed by four carbon atoms and an N<sub>2</sub> atom in addition to the N<sub>1</sub> atom, with N<sub>2</sub> being a secondary amine, a tertiary amine having the substituent —CR<sub>5</sub>R<sub>6</sub>CN or a quaternary amine having the substituents —R<sub>5</sub> and —CR<sub>5</sub>R<sub>6</sub>CN, wherein R<sub>5</sub> and R<sub>6</sub> may each be a H or C<sub>1-6</sub> alkyl.

4. The composition as in claim 1 wherein the Formula I compound is from about 1 wt.% to about 100 wt.% of the composition total.

5. The composition as in claim 1 being substantially non-hygroscopic.

6. The composition as in claim 1 wherein the composition includes from about 1 wt.% to about 99 wt.% of another compound related to the Formula I compound, but differing therefrom in counterion, and wherein Formula I compound is in an amount effective for reduced hygroscopicity of the salt composition.

7. The composition as in claim 1 wherein the Formula I compound has a water uptake of less than about 5 wt.% water at 80% R.H. and 80°F at equilibrium or about 48 hours.

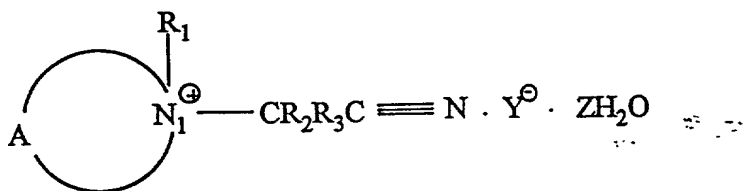
8. The composition as in claim 1 wherein Z is a value in the range of 0 to 6.

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9. The composition as in claim 2 wherein  $R_1$  is a lower alkyl.

10. A substantially solid composition, the composition including a compound with the structure of Formula I

FORMULA I



- 5 wherein A is a saturated ring formed by five atoms in addition to the  $N_1$  atom, the five saturated ring atoms being four carbon atoms and a heteroatom, the substituent  $R_1$  bound to the  $N_1$  atom of the Formula I structure including either (a) a  $C_{1-24}$  alkyl or
- 10 alkoxyated alkyl where the alkoxy is  $C_{2-4}$ , (b) a  $C_{4-24}$  cycloalkyl, (c) a  $C_{7-24}$  alkaryl, (d) a repeating or nonrepeating alkoxy or alkoxyated alcohol, where the alkoxy unit is  $C_{2-4}$ , or (e)  $-\text{CR}_2\text{R}_3\text{C} \equiv \text{N}$  where  $R_2$  and  $R_3$  are
- 15 each H, a  $C_{1-24}$  alkyl, cycloalkyl, or alkaryl, or a repeating or nonrepeating alkoxy or alkoxyated alcohol where the alkoxy unit is  $C_{2-4}$ , the  $R_2$  and  $R_3$  substituents are each H, a  $C_{1-24}$  alkyl, cycloalkyl, or alkaryl, or a
- 20 repeating or nonrepeating alkoxy or alkoxyated alcohol where the alkoxy unit is  $C_{2-4}$ , Z is a value in the range of 0 to 10, and wherein Y is monovalent or multivalent and is sulfate, bisulfate, tosylate, or mixtures of bisulfate and sulfate as counterion.

11. The composition as in claim 10 being substantially non-hygroscopic.

12. The composition as in claim 10 wherein the Formula I compound is from about 1 wt.% to about 100 wt.% of the total composition.

13. The composition as in claim 10 wherein the composition includes from about 1 wt.% to about 99 wt.% of another compound related to the Formula I compound, but differing therefrom in counterion, and  
5 wherein Formula I compound is in an amount effective for reduced hygroscopicity of the salt composition.

14. The composition as in claim 10 wherein the Formula I compound has a water uptake of less than about 5 wt.% water at 80% R.H. and 80°F at equilibrium or about 48 hours.

15. The composition as in claim 10 wherein Z is 0 to 1.

16. The composition as in claim 10 wherein the heteroatom is oxygen or sulfur and R<sub>1</sub> is a lower alkyl.

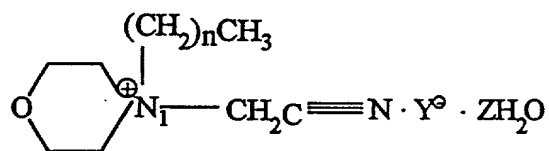
17. The composition as in claim 16 being in the form of flowable granules.

18. The composition as in claim 17 wherein the granules have an average particle size between about 100  $\mu\text{m}$  to about 1200  $\mu\text{m}$ .

19. The composition as in claim 17 wherein the granules are substantially non-aggregating under ambient conditions.

20. A substantially solid salt composition, the salt composition having therein a compound with the structure of Formula II

FORMULA II



5 wherein n is 0 to 24, Z is a value in the range of 0 to 10, and Y is monovalent or multivalent and is sulfate, bisulfate, tosylate, or mixtures of sulfate and bisulfate as counterion.

21. The salt composition as in claim 20 wherein the Formula II compound is from about 1 wt.% to about 100 wt.% of the composition total.

22. The salt composition as in claim 20 being substantially non-hygroscopic.

23. The salt composition as in claim 20 wherein the salt composition includes from about 1 wt.% to about 99 wt.% of another compound related to the Formula II compound, but differing therefrom in counterion, and wherein Formula I compound is in an amount effective for reduced hygroscopicity of the salt composition.

24. The salt composition as in claim 20 wherein the Formula II compound has a water uptake of less than about 5 wt.% water at 80% R.H. and 80°F at equilibrium or about 48 hours.

25. The salt composition as in claim 20 wherein Z is 0 to 6.

26. The salt composition as in claim 20 wherein n is an integer from 0 to 4, and Z is in a range of from about 0 to about 1.

27. The salt composition as in claim 20 wherein n is 0.

28. The salt composition as in claim 27 wherein Z is in a range from about 0 to about 1.

29. The salt composition as in claim 27 wherein the salt composition includes from about 1 wt.% to about 99 wt.% of another compound related to the Formula II compound, but differing therefrom in counterion, and wherein Formula I compound is in an amount effective for reduced hygroscopicity of the salt composition.

30. The salt composition as in claim 27 being in the form of granules.

31. Substantially solid N-methyl morpholinium acetonitrile bisulfate.

32. The substantially solid N-methyl morpholinium acetonitrile bisulfate of claim 31 in crystalline form.

33. A mixture of substantially solid N-methyl morpholinium acetonitrile bisulfate and sulfate.

34. A process for preparing a compound in accordance with claim 10 comprising:

heating the Formula I compound in alkyl sulfate form in an acid aqueous solution for a  
5 sufficient period of time to convert at least some of the compound to have sulfate or bisulfate as counterion.

35. The process as in claim 34 wherein the heating is from about 40°C to 150°C.

36. The process as in claim 34 wherein the acid aqueous solution has a pH of from about -1 to about 6.

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